

(2)

OIFE

## RAW SEQUENCE LISTING

DATE: 05/17/2001

PATENT APPLICATION: US/09/849,869

TIME: 08:54:44

Input Set : A:\CALTE004C1seqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

ENTERED

```

4 <110> APPLICANT: Anderson, David J.
5     Dong, Xinzhong
6     Zylka, Mark
7     Simon, Melvin
8     Han, Sang-kyou
10 <120> TITLE OF INVENTION: PAIN SIGNALING MOLECULES
13 <130> FILE REFERENCE: CALTE.004C1
C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/849,869
C--> 15 <141> CURRENT FILING DATE: 2001-05-04
15 <150> PRIOR APPLICATION NUMBER: US 60/222,344
16 <151> PRIOR FILING DATE: 2000-08-01
18 <150> PRIOR APPLICATION NUMBER: US 60/202,027
19 <151> PRIOR FILING DATE: 2000-05-04
21 <150> PRIOR APPLICATION NUMBER: US 09/704,707
22 <151> PRIOR FILING DATE: 2000-11-03
24 <150> PRIOR APPLICATION NUMBER: US unknown
25 <151> PRIOR FILING DATE: 2001-04-19
27 <160> NUMBER OF SEQ ID NOS: 109
29 <170> SOFTWARE: FastSEQ for Windows Version 4.0
31 <210> SEQ ID NO: 1
32 <211> LENGTH: 1088
33 <212> TYPE: DNA
34 <213> ORGANISM: Mus Musculus
36 <220> FEATURE:
37 <221> NAME/KEY: CDS
38 <222> LOCATION: (115)...(1026)
40 <400> SEQUENCE: 1
41 acagaagcca gagagctaca tccagcaaga ggaatggggg aaagcagcac ctgtgcaggg 60
42 tttctagccc taaacacatc ggcctcgcca acagcaccce caacaactaa tcca'atg 117
43                                     Met
44                                     1
46 gac aat acc atc cct gga ggt atc aac atc acg att ctg atc cca aac 165
47 Asp Asn Thr Ile Pro Gly Gly Ile Asn Ile Thr Ile Leu Ile Pro Asn
48             5             10             15
50 ttg atg atc atc atc ttc gga ctg gtc ggg ctg aca gga aat ggc att 213
51 Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Gly Ile
52             20             25             30
54 gtg ttc tgg ctc ctg ggc ttc tgt ttg cac agg aac gcc ttc tca gtc 261
55 Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser Val
56             35             40             45
58 tac atc cta aac tta gct cta gct gac ttc ttc ttc ctc cta ggt cac 309
59 Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly His
60 50             55             60             65
62 atc ata gat tcc ata ctg ctt ctt ctc aat gtt ttc tac cca att acc 357
63 Ile Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile Thr
64             70             75             80
66 ttt ctc ttg tgc ttt tac acg atc atg atg gtt ctc tat atc gca ggc 405

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/849,869

DATE: 05/17/2001

TIME: 08:54:44

Input Set : A:\CALTE004C1seqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

```

67 Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala Gly
68      85      90      95
70 ctg agc atg ctc agt gcc atc agc act gag cgc tgc ctg tct gta ctg 453
71 Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu
72      100      105      110
74 tgc ccc atc tgg tat cac tgt cac cgc cca gaa cac aca tca act gtc 501
75 Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr Val
76      115      120      125
78 atg tgt gct gtc atc tgg gtc ctg tcc ctg ttg atc tgc att ctg aat 549
79 Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu Asn
80 130      135      140      145
82 agt tat ttc tgc ggt ttc tta aat acc caa tat aaa aat gaa aat ggg 597
83 Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn Gly
84      150      155      160
86 tgt ctg gca ttg aac ttc ttt act gct gca tac ctg atg ttt ttg ttt 645
87 Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu Phe
88      165      170      175
90 gtg gtc ctc tgt ctg tcc agc ctg gct ctg gtg gcc agg ttg ttc tgt 693
91 Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe Cys
92      180      185      190
94 ggt act ggg cag ata aag ctt acc aga ttg tat gta acc att att ctg 741
95 Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile Leu
96      195      200      205
98 agc att ttg gtt ttt ctc ctt tgc gga ttg ccc ttt ggc atc cac tgg 789
99 Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His Trp
100 210      215      220      225
102 ttt ctg tta ttc aag att aag gat gat ttt cat gta ttt gat ctt gga 837
103 Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu Gly
104      230      235      240
106 ttt tat ctg gca tca gtt gtc ctg act gct att aat agc tgt gcc aac 885
107 Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala Asn
108      245      250      255
110 ccc atc att tac ttc ttc gtg gga tcc ttc agg cat cgg ttg aag cac 933
111 Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys His
112      260      265      270
114 cag acc ctc aaa atg gtt ctc cag aat gca ctg caa gac act cct gag 981
115 Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro Glu
116      275      280      285
118 aca gcc aaa atc atg gtg gag atg tca aga agc aaa tca gag cca 1026
119 Thr Ala Lys Ile Met Val Glu Met Ser Arg Ser Lys Ser Glu Pro
120 290      295      300
122 tgatgaagag cctttgcctg gcccttagaa gtggctttgg ggtgagcatt gccctgctgc 1086
123 ac 1088
125 <210> SEQ ID NO: 2
126 <211> LENGTH: 304
127 <212> TYPE: PRT
128 <213> ORGANISM: Mus Musculus
130 <400> SEQUENCE: 2
131 Met Asp Asn Thr Ile Pro Gly Gly Ile Asn Ile Thr Ile Leu Ile Pro

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/849,869

DATE: 05/17/2001

TIME: 08:54:44

Input Set : A:\CALTE004Clseqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

```

132 1          5          10          15
133 Asn Leu Met Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Gly
134          20          25          30
135 Ile Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser
136          35          40          45
137 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly
138          50          55          60
139 His Ile Ile Asp Ser Ile Leu Leu Leu Asn Val Phe Tyr Pro Ile
140 65          70          75          80
141 Thr Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala
142          85          90          95
143 Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val
144          100         105         110
145 Leu Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr
146          115         120         125
147 Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Cys Ile Leu
148          130         135         140
149 Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn
150 145         150         155         160
151 Gly Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu
152          165         170         175
153 Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe
154          180         185         190
155 Cys Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile
156          195         200         205
157 Leu Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His
158          210         215         220
159 Trp Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu
160 225         230         235         240
161 Gly Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala
162          245         250         255
163 Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys
164          260         265         270
165 His Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro
166          275         280         285
167 Glu Thr Ala Lys Ile Met Val Glu Met Ser Arg Ser Lys Ser Glu Pro
168          290         295         300

```

171 &lt;210&gt; SEQ ID NO: 3

172 &lt;211&gt; LENGTH: 1234

173 &lt;212&gt; TYPE: DNA

174 &lt;213&gt; ORGANISM: Mus musculus

176 &lt;220&gt; FEATURE:

177 &lt;221&gt; NAME/KEY: CDS

178 &lt;222&gt; LOCATION: (137)...(1051)

180 &lt;400&gt; SEQUENCE: 3

181 tctgtagtga ctgtatcttt cctttctacac aagccagtga gctacatcca acaagaggat 60

182 tggggaaagc aatgggtgaag cattttcttgc ctittaagacc tcagcctcac caacagcacc 120

183 agtgacaaca aatcca atg gac gaa acc ctc cct gga agt atc aac att agg 172

184 Met Asp Glu Thr Leu Pro Gly Ser Ile Asn Ile Arg

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/849,869

DATE: 05/17/2001

TIME: 08:54:44

Input Set : A:\CALTE004C1seqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

```

185          1          5          10
187 att ctg atc cca aaa ttg atg atc atc ttc gga ctg gtc gga ctg 220
188 Ile Leu Ile Pro Lys Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu
189          15          20          25
191 atg gga aac gcc att gtg ttc tgg ctc ctg ggc ttc cac ttg cgc aag 268
192 Met Gly Asn Ala Ile Val Phe Trp Leu Leu Gly Phe His Leu Arg Lys
193          30          35          40
195 aat gac ttc tca ctc tac atc cta aac ttg gcc cgg gct gac ttc ctt 316
196 Asn Asp Phe Ser Leu Tyr Ile Leu Asn Leu Ala Arg Ala Asp Phe Leu
197          45          50          55          60
199 ttc ctc ctc agt agt atc ata gct tcc acc ctg ttt ctt ctc aaa gtt 364
200 Phe Leu Leu Ser Ser Ile Ile Ala Ser Thr Leu Phe Leu Leu Lys Val
201          65          70          75
203 tcc tac ctc agc atc atc ttt cac ttg tgc ttt aac acc att atg atg 412
204 Ser Tyr Leu Ser Ile Ile Phe His Leu Cys Phe Asn Thr Ile Met Met
205          80          85          90
207 gtt gtc tac atc aca ggg ata agc atg ctc agt gcc atc agc act gag 460
208 Val Val Tyr Ile Thr Gly Ile Ser Met Leu Ser Ala Ile Ser Thr Glu
209          95          100          105
211 tgc tgc ctg tct gtc ctg tgc ccc acc tgg tat cgc tgc cac cgt cca 508
212 Cys Cys Leu Ser Val Leu Cys Pro Thr Trp Tyr Arg Cys His Arg Pro
213          110          115          120
215 gta cat aca tca act gtc atg tgt gct gtg atc tgg gtc cta tcc ctg 556
216 Val His Thr Ser Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu
217          125          130          135          140
219 ttg atc tgc att ctg aat agc tat ttc tgt gct gtc tta cat acc aga 604
220 Leu Ile Cys Ile Leu Asn Ser Tyr Phe Cys Ala Val Leu His Thr Arg
221          145          150          155
223 tat gat aat gac aat gag tgt ctg gca act aac atc ttt acc gcc tcg 652
224 Tyr Asp Asn Asp Asn Glu Cys Leu Ala Thr Asn Ile Phe Thr Ala Ser
225          160          165          170
227 tac atg ata ttt ttg ctt gtg gtc ctc tgt ctg tcc agc ctg gct ctg 700
228 Tyr Met Ile Phe Leu Leu Val Val Leu Cys Leu Ser Ser Leu Ala Leu
229          175          180          185
231 ctg gcc agg ttg ttc tgt ggc gct ggg cag atg aag ctt acc aga ttt 748
232 Leu Ala Arg Leu Phe Cys Gly Ala Gly Gln Met Lys Leu Thr Arg Phe
233          190          195          200
235 cat gtg acc atc ttg ctg acc ctt ttg gtt ttt ctc ctc tgc ggg ttg 796
236 His Val Thr Ile Leu Leu Thr Leu Leu Val Phe Leu Leu Cys Gly Leu
237          205          210          215          220
239 ccc ttt gtc atc tac tgc atc ctg tta ttc aag att aag gat gat ttc 844
240 Pro Phe Val Ile Tyr Cys Ile Leu Leu Phe Lys Ile Lys Asp Asp Phe
241          225          230          235
243 cat gta tta gat gtt aat ttt tat cta gca tta gaa gtc ctg act gct 892
244 His Val Leu Asp Val Asn Phe Tyr Leu Ala Leu Glu Val Leu Thr Ala
245          240          245          250
247 att aac agc tgt gcc aac ccc atc atc tac ttc ttc gtg ggc tct ttc 940
248 Ile Asn Ser Cys Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe
249          255          260          265

```

## RAW SEQUENCE LISTING

DATE: 05/17/2001

PATENT APPLICATION: US/09/849,869

TIME: 08:54:44

Input Set : A:\CALTE004C1seqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

```

251 aga cat cag ttg aag cac cag acc ctc aaa atg gtt ctc cag agt gca 988
252 Arg His Gln Leu Lys His Gln Thr Leu Lys Met Val Leu Gln Ser Ala
253 270 275 280
255 ctg cag gac act cct gag aca gct gaa aac atg gta gag atg tca agt 1036
256 Leu Gln Asp Thr Pro Glu Thr Ala Glu Asn Met Val Glu Met Ser Ser
257 285 290 295 300
259 aac aaa gca gag cct/tgatgaagag cctctacctg gacctcagag gtggctttgg 1091
260 Asn Lys Ala Glu Pro
261 305
263 agtgcgacct gccctgctgc acttgaccac tgtccactct tctctcagct tactgatttg 1151
264 acatgcctca gtggctccacc aacaacttca acatctctcc actaacttag tttttctacc 1211
265 cctcctgaat aaaagcatta atc 1234
267 <210> SEQ ID NO: 4
268 <211> LENGTH: 305
269 <212> TYPE: PRT
270 <213> ORGANISM: Mus musculus
272 <400> SEQUENCE: 4
273 Met Asp Glu Thr Leu Pro Gly Ser Ile Asn Ile Arg Ile Leu Ile Pro
274 1 5 10 15
275 Lys Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Met Gly Asn Ala
276 20 25 30
277 Ile Val Phe Trp Leu Leu Gly Phe His Leu Arg Lys Asn Asp Phe Ser
278 35 40 45
279 Leu Tyr Ile Leu Asn Leu Ala Arg Ala Asp Phe Leu Phe Leu Leu Ser
280 50 55 60
281 Ser Ile Ile Ala Ser Thr Leu Phe Leu Leu Lys Val Ser Tyr Leu Ser
282 65 70 75 80
283 Ile Ile Phe His Leu Cys Phe Asn Thr Ile Met Met Val Val Tyr Ile
284 85 90 95
285 Thr Gly Ile Ser Met Leu Ser Ala Ile Ser Thr Glu Cys Cys Leu Ser
286 100 105 110
287 Val Leu Cys Pro Thr Trp Tyr Arg Cys His Arg Pro Val His Thr Ser
288 115 120 125
289 Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile
290 130 135 140
291 Leu Asn Ser Tyr Phe Cys Ala Val Leu His Thr Arg Tyr Asp Asn Asp
292 145 150 155 160
293 Asn Glu Cys Leu Ala Thr Asn Ile Phe Thr Ala Ser Tyr Met Ile Phe
294 165 170 175
295 Leu Leu Val Val Leu Cys Leu Ser Ser Leu Ala Leu Leu Ala Arg Leu
296 180 185 190
297 Phe Cys Gly Ala Gly Gln Met Lys Leu Thr Arg Phe His Val Thr Ile
298 195 200 205
299 Leu Leu Thr Leu Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Val Ile
300 210 215 220
301 Tyr Cys Ile Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Leu Asp
302 225 230 235 240
303 Val Asn Phe Tyr Leu Ala Leu Glu Val Leu Thr Ala Ile Asn Ser Cys
304 245 250 255

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/849,869

DATE: 05/17/2001

TIME: 08:54:45

Input Set : A:\CALTE004C1seqlist.txt

Output Set: N:\CRF3\05172001\I849869.raw

L:15 M:270 C: Current Application Number differs, Replaced Current Application No

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date